

III. REMARKS

United States Serial No. 09/560,469 was filed on April 28, 2000 with claims 1-40 inclusive. Claims 41-46 were added by Preliminary Amendment filed on June 5, 2002. A Restriction Requirement for this application was mailed by the USPTO on April 14, 2003. On May 14, 2003, Appellants elected claims 1-27 and 41-44 for prosecution in the present application. Claims 1-27 and 41-44 were finally rejected and claims 28-40, 45, and 46 were withdrawn from consideration. The final rejection of claims 1-27 and 41-44 was appealed to the Board of Patent Appeals and Interferences, which affirmed the final rejection of the claims. In view of the amendments and remarks set forth herein, Applicants respectfully request reconsideration of the application and the issuance of a formal notice of allowance directed to claims 1-27 and 41-44.

35 U.S.C. §103 Rejection

Claims 1-27 and 41-44 were finally rejected under 35 U.S.C. §103 over United State Patent No. 5,580,532 (“US ‘532”), in view of JP 07-286,514 (“JP ‘514”) and GB 1,481,133 (“GB ‘133”). The final rejection of claims 1-27 and 41-44 was affirmed by the Board of Patent Appeals and Interferences.

It has been alleged that US ‘532 discloses a device comprising a housing, a fragile structure mounted in the housing, and a support element disposed between the housing and the fragile structure, where the support element comprises an integral, non-expanding sheet of ceramic fibers containing alumina and silica having an average diameter of 1-10 microns; that JP ‘514 discloses a ceramic fiber mat disposed between a catalyst and a housing, where the ceramic fibers of the mat have been heat treated at a temperature of 1000-1300°C for an effective amount of time to produce a crystalline structure having 0-10% crystallinity; and that GB ‘133 discloses providing ceramic fibers for thermal insulation and heat treating fibers at 950°C to 1050°C from 10 minutes to 1 hour to produce fibers having a certain crystallite size.

As a result, it has been alleged that it would have been obvious to one having ordinary skill in the art to heat treat the ceramic fibers of US '532 to form fibers having a percent crystallinity as allegedly disclosed by JP '514 and a crystallite size as allegedly disclosed by GB '133.

US '532

Applicants maintain their traversal of the final rejection of claims 1-27 and 41-44. The present claims recite limitations directed to the percent crystallinity of the fibers of the support element, the crystallite size of the crystalline structure of the fibers of the support element, and the holding force performance of the support element of the exhaust gas treatment device. By contrast, US '532 does not disclose, suggest, or provide motivation for the percent crystallinity or crystallite size of the crystalline structure of the fibers of the support element. Furthermore, US '532 does not provide any teaching, suggestion, or motivation to prepare a mounting mat for exhaust gas treatment devices which include heat treated ceramic fibers.

GB '133

Applicants submit that there is no disclosure, suggestion, or motivation to combine GB '133 with US '532. US '532 does not disclose or suggest that the ceramic fibers of the support element are, or should be, heat treated in order to perform the required functions of the support element. Heat treating ceramic fibers is simply not addressed or contemplated by the disclosure of US '532.

Additionally, GB '133 does not disclose, suggest, or provide motivation to utilize the fibers disclosed therein in an mounting mat for exhaust gas treatment devices. Applicants respectfully submit that the teaching to incorporate a support element of heat treated ceramic fibers into an exhaust gas treatment device is derived only from the present application, and that the combination of GB '133 and US '532 is a result of

improper hindsight analysis. Applicants also submit that there is no teaching or disclosure that the fibers of GB '133 exert any minimum holding pressure, or would be suitable for use as mounting mats in catalytic converters. Accordingly, Applicants respectfully submit that there is no motivation to combine GB '133 and US '532. Finally, the proposed combination of GB '133 and US '532 still does not teach or suggest the claim limitations of percent crystallinity and holding force performance of the support element in an exhaust gas treatment device.

JP '514

The fibers of JP '514 are strictly limited to fiber compositions having a weight ratio of $\text{Al}_2\text{O}_3:\text{SiO}_2$ of 70:30 – 74:26. See Abstract (Pages 1 and 2); Claim 1; and Page 4, Lines 3-7. Independent claims 1 and 12 have been amended to recite that the aluminosilicate fibers comprise from greater than 30 weight percent to less than 70 weight percent alumina and from less than 70 weight percent to greater than 30 weight percent silica. JP '514 expressly teaches that when $\text{Al}_2\text{O}_3:\text{SiO}_2$ ratio is not in the range of 70:30 – 74:26, fiber deterioration occurs prematurely and the fibers do not withstand long usage. See Page 4, Lines 4-7. In view of the teachings of JP '514, there is no disclosure, suggestion, or motivation to utilize aluminosilicate fibers having a weight ratio of $\text{Al}_2\text{O}_3:\text{SiO}_2$ that is outside of the range of 70:30 – 74:26 in the formation of a support element for an exhaust gas treatment device. As amended claims 1 and 12 recite a weight ratio of $\text{Al}_2\text{O}_3:\text{SiO}_2$ that is clearly outside of the weight ratio disclosed by JP '514, Applicants respectfully submit these claims are allowable over JP '514.

In conclusion, Applicants respectfully submit that claims 1-27 and 41-44 are allowable over the cited prior art for the following reasons:

- that US ‘532 does not disclose, suggest, or provide motivation to heat treat ceramic fibers, or to use heat treated ceramic fibers in the formation of a support element for an exhaust gas treatment device;
- that US ‘532 does not disclose, suggest, or provide motivation to use of melt formed fibers in the formation of a support element for an exhaust gas treatment device;
- that GB ‘133 does not disclose, suggest, or provide motivation to utilize heat treated ceramic fibers in the formation of a support element for an exhaust gas treatment device and therefore there is no motivation to combine GB ‘133 with either US ‘532 or JP ‘514;
- that GB ‘133 does not disclose, suggest, or provide motivation for a mat of heat treated ceramic fibers possessing the presently claimed percent crystallinity, crystallite size, or holding force performance capabilities; and
- that JP ‘514 is strictly limited to the use of sol-gel derived fibers of a fiber composition having a weight ratio of Al₂O₃:SiO₂ of 70:30 – 74:26. and expressly teaches away from the use of fiber compositions falling outside of this range.

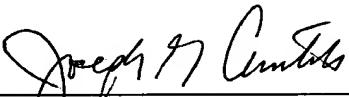
In view of the above amendments and remarks, Applicants respectfully request withdrawal of the 35 U.S.C. §103 rejection and further request the issuance of a formal notice of allowance directed to the pending claims.

AUTHORIZATION TO CHARGE DEPOSIT ACCOUNT

In the event an additional fee is applicable to the filing of this document and the required fee is not enclosed, or the fee submitted is insufficient, the Director is hereby authorized to charge any fees for Docket No. UNF-9058 A which might be required to effect the filing of this (these) document(s) to Account No. 50-3275. This authorization is being submitted herewith in duplicate.

Should the Examiner have any questions regarding the amendments and/or remarks presented in the present response, Applicants' undersigned attorney would welcome a telephone call.

Respectfully submitted,



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